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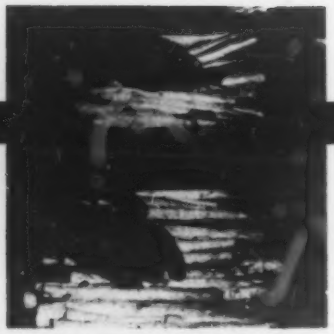
NEW FOOD PLANT CONTEST SEE PAGE 11

FOOD ENGINEERING



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We've come a long way, baby! In the food industry, automation technology is now evolutionary, not revolutionary. Photo source: Bettmann Archive.

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PACKAGING STANDBYS

Poised For A Comeback

Traditional packages are still holding their own with an environmentally-conscious public. But can the conflicting forces of recyclability and convenience live side by side in the packaging arena?

JOYCE FASSL
MANAGING EDITOR

If the *Saturday Night Live* "Church Lady" worked for the food industry, her motto might be, "How Convenient...and How Recyclable?" But can these two forces live side by side and still make a happy consumer? Viewers may have to tune in at the year 2000 for the dramatic conclusion of "As the Package Recycles."

As the world changes, so goes the packaging industry. More single parents, more working parents, more single people, leading everyone to crave—yes, the most over-used word in the food industry today—convenience.

But as consumers crave convenience, many are willing to inconvenience themselves enough to recycle the packages that all these great foods come in. (For an closer look at recycling, see the sidebar on the next page.)

According to the Department of Commerce (DOC), intense supermarket space competition makes packaging more important than ever. U.S. lifestyles are not only effecting the types of new products developed, but also the types of packages developed. The large baby boomer segment of consumers is moving into middle age, the group which traditionally spends

Two and one-half oz. glass jars were chosen by Heinz for packaging ketchup for room service trays because many hotels want to present an upscale image which doesn't come across with foil bags. (Source: Heinz USA.)

Kraft General Foods recently introduced a new beverage, *Cappio* Iced Cappuccino, in aluminum cans. (Source: Reynolds Metals Co.)

Recycling: Less trash, more cash for manufacturers?

The average American throws away about four pounds of trash every day. Recycling and waste management has become so important, it is now one of the top four concerns of Americans. (Solving problems related to crime and drugs, finding a cure for AIDS, and health care cost containment are the three top priorities.) As a result, environmentally-friendly packaging has become one of the top priorities of food manufacturers.

Ironically, the perceived top causes of the consumer solid waste problem are not the top contributors to the nation's landfills, according to a study on public attitudes and the environment conducted last year by the Roper Organization for S.C. Johnson & Son (see chart at right). What Americans think are the top four causes constitute only about 10 percent of what really goes into a typical landfill. The bottom four perceived causes of the problem—yard waste, food scraps, paper napkins and plates and wastepaper—constitute nearly 50 percent of the average landfill.

"Pressures to reduce solid waste, incineratables and landfills go far beyond the aluminum can which in fact makes up less than one percent of the municipal waste stream," said John C. Miller, senior engineer at Reynolds Metals, speaking at Pack Expo held last November in Chicago. More than 50 percent of all aluminum cans manufactured in the '80s were recycled, he added. "Recycling is essential to the long-term viability of the packaging industry, and the more progress we can show, the better."

Reynolds has made strides to increase recycling. After cans are purchased from consumers, aluminum is sent to Reynolds recycling plants for processing. There it is prepared for reclamation plants where it is melted down and cast into ingot for rolling mills to make can stock which is then shipped to plants for fabrication into new cans. This system can move cans from a retail shelf to a consumer, through the recycling process and back to the retailer in six weeks. Reclaimed aluminum provides one-third of Reynolds' metal requirements.

Reynolds wants to expand its recycling efforts to aluminum foil. According to the company, aluminum foil is recyclable, but it must be returned clean. Reynolds is also looking into recycling aluminum in laminated packages, but this project is still in a planning phase. Plastic and paper would be burned away and aluminum would remain, yielding a granular aluminum suitable for destructive materials.

American perceive glass bottles as taking up about the same amount of space in landfills as aluminum cans. According Ann E. Estes of Owens-Brockway Glass Containers, the attributes of glass packaging are its microwaveability, reclosability and *recyclability.*

The glass industry is growing more quickly in other parts of the world where recycling is becoming increasingly important. For example in Germany, yogurt is packaged in glass; Italy, tuna fish; South America, milk. Germany has very aggressive recycling laws, so even meat patés are sold in glass containers, she said.

Paper and paperboard manufacturers have also increased environmental awareness. According to Evan Wise manager of mill research at Jefferson Smurfit Research Center, Carol Stream, IL the technology now exists to make quality recycled products. "The U.S. currently recycles about 30 percent of the paper produced," he said, but within the next five years the goal is 40 percent.

the most at the supermarket. They want convenience and are willing to pay for it, according to DOC.

But, the convenience-hungry consumers of '80s have gone "green," causing the more traditional forms of packaging—glass, metal and paperboard—to give plastic a run for its money.

Shipments of metal cans rose about 3 percent in 1990, glass about 1 percent, according to *The U.S. Industrial Outlook*. But the plastic bottles which enjoyed double digit growth in 1988 and 1989 slipped to a 1.5 percent increase for 1990. The majority of growth in metal cans came from the increased use of cans for soft drinks.

One example of a new beverage packaged in aluminum cans comes from Kraft General Foods (KGF), Glenview, IL. The company recently introduced *Cappio* Iced Cappuccino in aluminum cans supplied by Reynolds Metal, Richmond, VA. According to Ann Marks, marketing manager, new product development for KGF, the can was chosen because of its attractive and distinctive style. Marks likes this container, which is retort processed, because it is non-breakable and more portable than other containers KGF may have chosen. The new product is being tested in Arizona and comes in three flavors: mocha, cinnamon and coffee.

Reynolds projects only about a 5 percent increase in can shipments over each of the next two years, according to Jeremiah J. Sheehan, vice president and general manager of the Reynolds Metal Can Division. This increase can be attributed to continued growth in the U.S. soft drink market and shifts by beverage producers from bottles to cans. Aluminum's share of the U.S. beverage can market in 1989 was 97 percent. During the first 8 months of '90, aluminum had a 92 percent share of soft drinks and a 99 percent share of beer. New interest in cans is also expected from Japan and Europe.

Charles G. Carson III, USS Division of USX Corp. (Pittsburgh) believes that the beverage industry still provides the most interesting oppor-

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International Paper, Purchase, NY instituted a program to test the feasibility of recycling post-consumer paperboard milk and juice cartons. Twenty schools in Williamson County, TN are collecting used polyethylene-coated gable-top cartons. The cartons will be shredded and sanitized locally and then transported to a regional repulping center where the components can be separated into two streams for reuse. A key element of the program, according to Joseph Rimstidt, vice president, liquid packaging for International Paper, is that it eliminates the need for a local repulping facility. "By solving that problem, we expect to demonstrate that recycling milk and juice cartons makes sense in economic as well as environmental terms."

But where do consumers place the blame for the waste problem? According to the Roper report, Americans think everyone shares some of the blame for the problem. Sixty percent criticized companies for not developing environmentally-sound consumer products and bringing them to market. The same number of people also believe that certain technological advancements made by business eventually produce unanticipated environmental problems.

Seventy percent blame themselves for the problem, saying that consumers are more interested in convenience than in the environment. But over fifty percent say they are not willing to pay more for environmentally-friendly products. So, who is supposed to solve the problem? Institutions, not individuals, say the consumers. Yet, consumers don't think manufacturers will solve the problem unless they are forced by law to do so.

How much are consumers willing to pay for a "green product?" According to Roper, not a lot—at least, not yet. When asked about eight hypothetical "green products"—products identical to existing ones, but which would theoretically cause much less pollution—Americans are reluctant to make much of a financial sacrifice. On average, they would pay a 6.6 percent increase, not much more than the current rate of inflation. But one-third said they would pay nothing to help achieve recycling and environmental goals. Product quality remains high on the consumer's list, but very few people are willing to accept an inferior product to help the environment.

Disposable diapers	41%
Plastic packaging	38
Plastic bottles	29
Aerosol containers	28
Large items such as furniture and appliances	24
Aluminum cans/bottles	14
Glass bottles	13
Tin cans	13
Newspapers	11
Paper packaging	10
Wastepaper	6
Paper plates and napkins	5
Food scraps	3
Grass clippings/yard waste	3

Source: The Environment: Public Attitudes and Individual Behavior from The Roper Organization Inc., commissioned by S.C. Johnson & Son, Inc.

GLASS, METAL & PAPERBOARD

Industry data:				percent change	
Value of shipments[1]	1988[2]	1989[2]	1990[3]	1988-89	1989-90
Glass containers	4,457	4,592	4,721	3.0	2.8
Metal cans	10,972	11,634	12,115	6.0	4.1
Sanitary food containers	2,382	2,643	–	11.0	–
Product data:					
Value of shipments[4]	1988[2]	1989[2]	1990[3]	1988-89	1989-90
Glass containers	4,405	4,538	4,666	3.0	2.8
Metal cans	10,603	11,243	12,152	6.0	8.1
Sanitary food containers	2,109	2,340	–	11.0	–

[1]Value of all products and services sold by establishments in the cans, containers, and sanitary food containers industries.
[2]Estimate
[3]Forecast
[4]Value of products classified in the cans, containers and sanitary food containers industries produced by all industries.

Source: U.S. Department of Commerce: Bureau of the Census; International Trade Administration.

Shipments of glass, metal and sanitary food containers are showing only moderate growth. But with changing consumer attitudes, these markets may turn around.

tunities for steel. USX claims to have about 5 percent of the market and says steel has an advantage of about $5 per thousand of manufactured cans over aluminum. To upset the entrenched aluminum can market, a new can company, Bev Pak, was set up to produce about 1.7 million cans a year for soft drinks and beer. To gain market share, the steel industry will have to change consumer perspective about steel and concentrate on recycling, Carson told those attending FoodPlas '90.

Beer cans are experiencing only small growth because beer in glass bottles is more popular. And as a result of its upscale, premium image, glass shipments are starting to turn around. 1988 and 1989 were the first years since '86 that glass experienced growth, says DOC. When all the numbers are finally in for 1990, glass shipments are expected to be up.

According to Ann Estes, former senior market development manager, now liquor industry sales manager at Owens-Brockway Glass Containers, Toledo, Ohio, one food product found its way back to glass. *Ovaltine*, which was traditionally packaged in glass, actually lost market share when it converted to composite can. Estes thinks that these types of conversions are driven by economics, but they wouldn't have taken place if food company marketing departments feared loss of sales.

The Heinz 2½ oz. ketchup jar for use on room service trays is a recent innovation helping the glass market. Hotels want to present an upscale image which doesn't come across with foil bags. Frito-Lay also chose short, squat, wide mouth glass containers for its salsa. "It's easy for product development people to choose glass as a package for new products because of all the research already known about filling, capping and quality control procedures," Estes told an audience at last year's FoodPlas '90.

If resin prices decline, glass may lose market share. But beverage companies still have to watch out for public perception of what is recyclable and what isn't when deciding what type of container to use. Also, lower prices for plastic containers and easy access to resin may threaten the paperboard market, according to the *Outlook*. Heat-resistant ovenable paperboard trays and containers is where most of the growth will be for the paperboard market. Aseptic packaging is another potential growth area for paperboard. But in the U.S., aseptic packages are mainly used for fruit drinks and juices, and some milk. Milk applications are not as popular here as they are in Europe for two reasons: U.S. supermarkets have lots of space for refrigerated milk products, and consumers have the misconception that milk must be refrigerated because they are unfamiliar with the attributes of aseptic packaging.

It looks like manufacturers will have to stay tuned to see if convenience and recycling continue to dominant the food industry. ▲